# BMP Data Entry & & Verification Guide



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# The Importance of BMP Data Collection

2017 Chesapeake Bay TMDL Update

#### Why do we need to collect BMP data from farms for the Chesapeake Bay Program?

New York (NY) is required to develop and maintain a Watershed Implementation Plan (WIP) outlining practices and procedures that will be in place by 2025 to restore the Chesapeake Bay. By submitting data, we document the implementation progress of Best Management Practices (BMP) made by NY for soil and water conservation and we provide the Environmental Protection Agency (EPA) with the reasonable assurance that NY continues to do the work year after year to meet water quality goals.

#### What is data used for?

Water quality targets are set by the EPA utilizing a complex computer model. These targets aim to achieve reductions in nitrogen, phosphorus, and sediment loads through continued implementation of farmstead and field conservation practices. NY's progress toward their planning targets is evaluated annually by using the model to estimate the nutrient and sediment load reduction based on the type and number of conservation practices implemented and reported to the EPA. Practices are credited by the Chesapeake Bay model toward reduction goals. The annual evaluation is called a "Progress Run". In addition, NY is required to provide 2-year milestone planning targets. The milestones provide short-term objectives and are key check-in points on the way to having all practices in place by 2025 to restore the Bay. If states fall behind on goals in the future, the EPA has suggested they will take actions to ensure progress.

#### What farmstead and field conservation practices can be reported?

The Upper Susquehanna Coalition (USC) is the designated data manager for agriculture in the NY portion of the Chesapeake Bay Watershed and is responsible for submitting BMP data to the Department of Environmental Conservation (DEC) for both the annual progress and 2-year milestones. Farm BMP data is collected under the NYS Agricultural Environmental Management (AEM) umbrella and is thereby held confidentially by SWCD's. The data submitted to the DEC and eventually the EPA for the Chesapeake Bay Model is aggregated to the county level; so individual farms are not identified. Practices such as stream restoration, cover crops, conservation tillage, nutrient management, manure storages, precision feed management, prescribed grazing, stream exclusion fence, forest and grass buffers, runoff controls from barnyards and heavy use area protection that are implemented by farms can all be credited by the Chesapeake Bay toward the nitrogen, phosphorus, and sediment reduction goals for NY.

#### USC Ag BMP Data Collection Form and USC AEM Online Tool

The USC has developed a form with a complete list of NY/CBP BMPs and the reportable units. This form can be used during an AEM visit to record all Ag BMPs that the farm has implemented. It is recommended to use the form to record annual data of individual farms that have had implementation since last year's reporting. Please include NRCS and FSA data! Once completed, the form will help to seamlessly transfer BMP data into the USC AEM Online Tool (http://stcgis.org/AEM). Annual progress data must be entered into the USC AEM Online Tool by July 31<sup>st</sup> each and every year.

For questions, please contact the USC Agricultural Coordinator.

# Chesapeake Bay TMDL

Progress and AEM Confidentiality

#### How is Progress data collected and reported to the EPA?

The Upper Susquehanna Coalition (USC) is the designated data manager for agricultural Best Management Practices (BMP's) in the New York State (NYS) portion of the Chesapeake Bay Watershed, and is responsible for submitting the BMP implementation data to the Department of Environmental Conservation (DEC) for both the annual progress and 2 year milestones. The data is entered by each counties Soil and Water Conservation District (SWCD) into the USC Online Tool. Data is then aggregated by county, submitted to the DEC, and eventually transferred to the Environmental Protection Agency (EPA) for the Chesapeake Bay Model. Individual farms are not identified. All farm BMP data is collected, recorded and reported under the NYS Agricultural Environmental Management (AEM) umbrella and is thereby held confidentially by the SWCD.

#### How can I assure my clients that their data is confidential?

The AEM Law has a subpart addressing confidentiality, which exempts AEM on-farm surveys, assessments, and plans from the Freedom of Information Law (FOIL) disclosure. The subpart serves as a useful tool for encouraging farmers to voluntarily participate in conservation work with SWCD's. As a note, information directly linked to NYS Agricultural Nonpoint Source Abatement & Control Program (AgNPS) contracts are technically a part of District's own programs (AgNPS and not AEM subpart 151-g).

So, if AEM Law maintains confidentiality of inventories, assessments, plans, and evaluations (that includes that data captured in the AEM Online Tool) in New York State, what about when its sent to the EPA? For starters, data that is entered into the USC AEM Online Tool is being stored on a server in an office located in the NY portion of the Chesapeake Bay Watershed and overseen by a USC staff member. USC staff has exclusive access to this data. Once the Tier I and BMP implementation data is in the system, it is only used by the USC for the annual progress runs and individual SWCD planning. In most cases, only the most recent year's implementation data will be pulled from the server. Data from the USC AEM Online Tool is cleansed of farm specific details (name, location, contact info, AEM ID number, etc.) and aggregated to the county level, so the report communicates all the collective work in a county and not per individual farm. Then, those anonymous county-aggregated data are sent to DEC for packaging into a standard nationwide database format required by EPA (the NEIEN node), and transmission to EPA for TMDL progress. Any FOIL request to DEC or FOIA request to EPA for the Chesapeake Bay data would result in a county-wide, aggregated dataset being released (not farm specific). The USC data is demonstrating good stewardship by farmers and only provides specified number of acres, or animal units that were treated by a specified number of practices in a given year by a county. It does not point out what still needs to be done within the NY portion of the watershed.

#### What about CAFO farms? Is their data confidential too?

The BMP data collected on Concentrated Animal Feeding Operations (CAFO) permitted farms for Chesapeake Bay TMDL progress runs and 2 year milestones is handled as described above. Beyond these efforts to collect BMP data for the TMDL, though confidentiality of data is different for CAFO-permitted farms; All information sent to DEC for CAFO permit purposes (NOIs, Annual Compliance Reports, Spill Reports, etc.) as well as inspection reports and documents associated with enforcement actions can be obtained via FOIL requests to DEC. DEC is also obligated to send Clean Water Act (CWA) permit info to EPA per their delegated authority to run the CAFO CWA permit on EPA's behalf in NYS.

In short, the work that the USC SWCD's are doing to collect, record, and report Agricultural BMP data is protected under AEM Law. Data is aggregated at the county level so that no individual farm is identified when reporting to DEC and EPA. CAFO farm data may fall into a different category because inspection reports and documents associated with enforcement actions can be obtained via FOIL requests. However, these requests would go through the DEC and not the SWCD's. If you have any questions, please contact the USC Agricultural Coordinator.

# USC AEM Online Tool User Guide http://stcgis.org/AEM

#### Login:

Enter username and password, then click Login. If you do not have a username or password, please contact the USC Ag Coordinator.

#### **Search Existing Farm Records:**

You can search existing records using complete or partial farm information details such as: farm name, owner name, etc. then click Search Database. You can also search by zooming into the farm on the map and clicking the green dot that corresponds to the operation you are looking for. The farm information will show in the grid below the map. Highlight the farm you wish to work with and click Continue.

#### Add New Farm Record:

You can add a new farm record by clicking the "Add New Farm Record" tab at the top right of the screen. You can zoom in or out of the map by using your scroll button on your mouse or by using the built in zoom features located at the bottom right of the map view. You can click "Show Imagery" at the bottom left of the map view to turn on aerial photography. Once you have zoomed into the operation location, click on the map icon on the top left of the map view. Then click the location on the map where you want to drop a point. Enter farm information on the right side of the screen and click Save and Continue.

#### Farm Details:

Enter the Farm Details then click Save. Clicking the Delete button at the bottom of the page will delete the entire farm record.

#### Tier 1:

To enter Tier 1 information click on the Tier 1 tab on the left of the screen. Answer all questions with check boxes and/or drop down boxes appropriately. When finished with entire page click SAVE.

NOTE: Checked = YES / Unchecked = NO

#### **Additional Tier 1 Instructions:**

To add animal counts and weights, click on the "Manage Animal Information" button.

- 1. Click "Add New".
- 2. Choose animal type from the "Name" dropdown list.
- 3. Enter animal weight (per animal).
- 4. Enter number of animals in that group.
- 5. Click Save then Close or Add New for additional animal groups and follow the above instructions.

NOTE: Animal Units are auto calculated using Chesapeake Bay Program calculations.

#### BMP:

To enter BMP data click on the BMP tab on the left side of the screen. If the farm is a CAFO, mark the check box at the top of the screen. If the farm is not a CAFO, leave checkbox blank. Enter any comments you wish to make about the farm and press SAVE. To open an individual BMP data entry screen, click on the clipboard icon to the right of the BMP name. For instructions on entering BMP data, please see "General Entry Instructions for Multi-Year Practices", or "General Entry Instructions for Annual Practices", and the individual BMP Definitions/Instructions pages.

#### **General Entry Instructions for Multi-Year Practices**

#### Instructions for entering NEW data:

- 1. Click "Add New".
- 2. Enter an implementation date this is the original date that the BMP was installed or implemented.
- 3. Enter an inspection date this is either the same as the implementation date, or it is the date the practice was inspected or verified.
- 4. Click PASS, FAIL, or Re-Inspect.
  - PASS = The practice is functioning properly.
  - FAIL = The practice is not functioning properly, and has already used its 1 year maintenance period.
  - Re-Inspect = The practice is not functioning properly and will be placed into a 1 year maintenance period. If needed maintenance does not occur within 1 year from the original inspection date, the BMP will be automatically retired. If needed maintenance has occurred and the BMP was reinspected and found to be functioning properly, enter the new inspection date and click PASS.
- 5. Enter specific BMP location on the operation by click the map icon. (See BMP Location instructions below)
- 6. Choose YES or NO for the following questions:
  - Is Cost Shared
  - Is NRCS Standard
- 7. Continue by following BMP specific entry instructions located on the individual BMP Definitions/Instructions pages.

#### **Instructions for <u>UPDATING</u>** data:

- 1. Enter a new inspection date for a previously implemented BMP This will be the date the practice was inspected or verified.
- 2. Click PASS, FAIL, or Re-Inspect.
  - PASS = The practice is functioning properly.
  - FAIL = The practice is not functioning properly, and has already used its 1 year maintenance period.
  - Re-Inspect = The practice is not functioning properly and will be placed into a 1 year maintenance period. If needed maintenance does not occur within 1 year from the original inspection date, the BMP will be automatically retired. If needed maintenance has occurred and the BMP was reinspected and found to be functioning properly, enter the new inspection date and click PASS.
- 3. Continue by following BMP specific entry instructions located on the individual BMP Definitions/Instructions pages.

#### **BMP Location Instructions:**

- 1. Click the map icon on the right side of the data entry screen.
- 2. Click on the map icon at the top left of the mapping screen, then click the location of the BMP. This will place a small red square wherever you click on the map.
- 3. Click Accept Location.

NOTE: If BMP location is placed in the wrong spot on the map, repeat steps 1 and 2.

### **General Entry Instructions for Annual Practices**

#### You MUST add a NEW record EVERY year.

#### Instructions for entering annual practice data:

#### You MUST add a NEW record EVERY year.

- 1. Click "Add New".
- 2. Enter an implementation date this is the date that the BMP was implemented.
- 3. If there was in field verification completed on this farm, check the field verified button and enter the date that the practice was verified. If the practice was not verified, leave blank.
- 4. Choose YES or NO for the following questions:
  - Is Cost Shared
  - Is NRCS Standard
- 5. Continue by following BMP specific entry instructions located on the individual BMP Definitions/Instructions pages.

# **Multi-Year BMP Definitions & Individual Data Entry Instructions**

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# Manure Storage Facility \*Includes manure stacking\*

**USC Definition:** Practices designed for proper handling, storage and utilization of manure wastes generated from animal operations. Reduced storage and handling loss is conserved in the manure and available for land application. This practice applies to dairy, beef, poultry, swine, horses, goat, sheep, and other livestock operations that rate a 1 or 2 on the AEM Tier 2 assessment for Manure Storage. This practice includes systems such as: Manure Lagoon, Under-barn Manure Storage, Bedded Pack, Manure Stacking Area (temporary or long term), and Manure Composting System.

Chesapeake Bay Definition: Practices designed for proper handling, storage, and utilization of wastes generated from confined animal operations. Reduced storage and handling loss is conserved in the manure and available for land application.

NRCS Definition (Could include multiple BMPs): Waste Storage Facility (313) A waste storage impoundment made by constructing an embankment and/or excavating a pit or dugout, or by fabricating a structure. The purpose is to temporarily store wastes such as manure, wastewater and contaminated runoff as storage function component of an agricultural waste management system. Waste Treatment Lagoon (359) A waste treatment impoundment made by constructing an embankment and/or excavating a pit or dugout.

Lifespan: 15 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. If a farm has a manure storage that is covered with floating cover or rigid cover, enter a check for cover (The cover BMP does <u>not</u> include a natural crust)
- 3. Enter any additional comments
- 4. Click SAVE then Close

NOTE: If operation has multiple storages, enter each practice individually.

#### Silage Leachate

**USC Definition:** Practices designed for proper handling, storage and utilization of silage leachate from any type of silage storage system, including: upright silos, ag bags, and feed bunkers. This practice applies to Dairy, Beef, Poultry, Swine, Horses, Goats, Sheep, and Other Livestock operations that rate a 1 or 2 on the AEM Tier 2 assessment for Silage Storage.

Chesapeake Bay Definition: N/A

NRCS Definition (Could include multiple BMPs): Waste Transfer (634) A system using structures, piles or conduits installed to convey wastes or waste byproducts from the agricultural production site to storage/treatment or application. Pumping Plants (533) A facility that delivers water at a designed pressure and flow rate. Includes the required pump(s) associated power unit(s), plumbing, appurtenances, and may include on site fuel or energy source(s), and protective structures. Vegetated Treatment Area (635) An area of permanent vegetation used for agricultural wastewater treatment. Waste Storage Facility (313) A waste storage impoundment made by constructing an embankment and/or excavating a pit or dugout, or by fabricating a structure.

Lifespan: 15 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. Enter any additional comments
- 3. Click SAVE then Close

#### Milkhouse Waste System

**USC Definition:** Practices designed for proper handling, storage and utilization of milkhouse waste and wash water. This practice applies to mainly dairy operations but can also apply to poultry facilities with egg wash water, vegetable facilities with wash water, or other operations that may have a wash down procedure that would collect nutrients.

Chesapeake Bay Definition: N/A

NRCS Definition (Could include multiple BMPs): Waste Transfer (634) A system using structures, piles or conduits installed to convey wastes or waste byproducts from the agricultural production site to storage/treatment or application. Pumping Plants (533) A facility that delivers water at a designed pressure and flow rate. Includes the required pump(s) associated power unit(s), plumbing, appurtenances, and may include on site fuel or energy source(s), and protective structures. Vegetated Treatment Area (635) An area of permanent vegetation used for agricultural wastewater treatment. Waste Storage Facility (313) A waste storage impoundment made by constructing an embankment and/or excavating a pit or dugout, or by fabricating a structure.

Lifespan: 15 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. Enter any additional comments
- 3. Click SAVE then Close

#### **Barnyard & Runoff Management**

**USC Definition:** Included in this system is the stabilization of areas frequently and intensively used by people, animals, or vehicles by establishing vegetative cover, surfacing with suitable materials (concrete, aggregate, mulches or managed vegetation), and/or installing needed structures. This BMP also includes the installation of practices to <u>control runoff from barnyard areas</u> by collecting and/or treating that runoff. This includes practices such as roof runoff control, diversion of clean water from entering the barnyard and control of runoff from barnyard areas, and animal trails and walkways. This practice applies to dairy, beef, poultry, swine, horses, goats, sheep, and other livestock operations.

**Chesapeake Bay Definition:** The stabilization of areas frequently and intensively used by people, animals, or vehicles by establishing vegetative cover, surfacing with suitable materials, and/or installing needed structures. This also includes the installation of practices to control runoff from barnyard areas. This includes practices such as roof runoff control, diversion of clean water from entering the barnyard and control of runoff from barnyard areas.

NRCS Definition (Could include multiple BMPs): Heavy Use Area Protection (561) HUAP is used to stabilize a ground surface that is frequently and intensively used by people, animals, or vehicles. Roof Runoff Structure (558) A structure that will collect, control, and convey precipitation runoff from a roof. Structure for Water Control (587) A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water. Diversion (362) A channel generally constructed across the slope with a supporting ridge on the lower side. Roofs and Covers (367) A rigid, semi-rigid, or flexible manufactured membrane, composite material or roof structure placed over a waste management facility. Subsurface Drain (606) A conduit installed beneath the ground surface to collect and/or convey excess water. Underground Outlet (620) A conduit or system of conduits installed beneath the surface of the ground to convey surface water to a suitable outlet. Vegetated Treatment Area (635) An area of permanent vegetation used for agricultural wastewater treatment. Trails and Walkways (575) A trail is a constructed path with a vegetated or earthen surface. A walkway is a constructed path with an artificial surface. A trail/walkway is used to facilitate the movement of animals, people, or off-road vehicles.

Lifespan: 10 years

#### **Instructions for entering data:**

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. Check all boxes that apply for practices present on the farm that control runoff from the barnyard and/or type(s) of barnyard surface
- 3. Enter any additional comments
- 4. Click SAVE then Close

NOTE: This takes the place of the BMP's previously named Barnyard Runoff Controls and Loafing Lot Management. These BMP's were combined into one reportable BMP record. Be sure to check the boxes for individual practices that are present on the operation.

NOTE: If the farm does not have a constructed heavy use area/barnyard because it has confined animals (after 2005) in free stall barns or moves them directly to a pasture or otherwise, then the farm can receive credit. (Enter the date the animals were confined as the implementation date – add "total confinement" in comments section)

#### **Soil Conservation Plans**

**USC Definition:** Farm conservation plans are a combination of agronomic, management and engineered practices that protect and improve soil productivity and water quality, and to prevent deterioration of natural resources on all of part of the farm. Plans may be prepared by staff working in conservation districts, natural resource conservation field offices or a certified private consultant. These types of plans would include: AEM Tier 3A Cropland Conservation plans, Highly Erodible Land (HEL) plans, and/or plans that meet the requirements of 1985 Food Security Act. This practice applies to dairy, beef, poultry, swine, horses, goats, sheep, other livestock, non-livestock agricultural operations, and any other agricultural land.

Chesapeake Bay Definition: Farm conservation plans are a combination of agronomic, management and engineered practices that protect and improve soil productivity and water quality, and to prevent deterioration of natural resources on all or part of a farm. Plans may be prepared by staff working in conservation districts, natural resource conservation field offices or a certified private consultant. In all cases the plan must meet technical standards.

NRCS Definition: A planned sequence of crops grown on the same ground over a period of time (i.e. the rotation cycle). This practice is applied to support one of more of the following purposes: Reduce sheet, rill and wind erosion; maintain or increase soil health and organic matter content; reduce water quality degradation due to excess nutrients; improve soil moisture efficiency; reduce plant pest pressures; provide feed and forage for domestic livestock; or provide food and cover habitat for wildlife, including pollinator forage, and nesting. This practice applies to cropland where at least one annually-planted crop is included in the crop rotation.

Lifespan: 10 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter total acres associated with the soil conservation plan if it is a NEW practice. Verify total acres associated with the soil conservation plan if it is a previously implemented practice.
- 2. Enter any additional comments.
- 3. Click SAVE then Close.

NOTE: If the operation has a CNMP, you must enter the Nutrient Management and Conservation Plan as two separate practices. Conservation Plan has a 10 year lifespan. Nutrient Management has a 1 year lifespan and must be entered annually.

#### **Prescribed Grazing**

**USC Definition:** This practice applies to operations that are managing pastures to improve water quality. Prescribed grazing can be applied to pastures with or without stream bank fencing. If no stream bank fencing exists the pasture must be managed to maintain 60% vegetation within the stream corridor. This practice uses a range of management techniques to improve the quality and quantity of forages grown, and reduce the impact of animal concentration areas including walkways, areas around watering troughs, and or supplemental feeding areas.

Chesapeake Bay Definition: This practice utilizes a range of pasture management and grazing techniques to improve the quality and quantity of the forages grown on pastures and reduce the impact of animal travel lanes, animal concentration areas or other degraded areas. Prescribed Grazing can be applied to pastures intersected by streams or upland pastures outside of the degraded stream corridor (35 feet width from top of bank). The modeled benefits of prescribed grazing practices can be applied to pasture acres in association with or without alternative watering facilities. They can also be applied in conjunction with or without stream access control. Pastures under the Prescribed Grazing systems are defined as having a vegetative cover of 60% or greater.

NRCS Definition: *Prescribed Grazing (528)* Managing the harvest of vegetation with grazing and/or browsing animals. This practice may be applied as a part of conservation management system to achieve one or more of the following: Improve or maintain desired species composition and vigor of plant communities; Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity; Improve or maintain surface and/or subsurface water quality and quantity; Improve or maintain riparian and watershed function; Reduce accelerated soil erosion and maintain or improve soil condition; Improve or maintain the quantity and quality of food and/or cover available for wildlife; Manage fine fuel loads to achieve desired conditions. This practice is applied to all lands where grazing and/or browsing animals are managed.

Lifespan: 10 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter animal numbers if it is a new practice. Verify animal numbers if it is a previously implemented practice.
- 2. Enter acres if it a new practice. Verify acres if it is a previously implemented practice.
- 3. Enter any additional comments.
- 4. Click SAVE then Close.

NOTE: The operation must have made a change after 2005 showing improved nutrient reductions.

#### **Exclusion Fence with Grass Buffer**

**USC Definition:** This BMP should be submitted for any fencing project along pastured streams that creates grass or herbaceous areas between pasture and stream. The BMP will convert pasture to agricultural open space and will fence livestock out of streams, moving the streamside depositional load back to pasture acres, but will NOT receive an upslope, grass buffer efficiency benefit. Applies to areas where animals are pastured, but fenced out of streams or waterbodies with a grass and/or unmanaged herbaceous buffer.

**Chesapeake Bay Definition:** This BMP should be submitted for any fencing project along pastured streams that creates grass or herbaceous areas. The BMP will convert pasture to agricultural open space (Phase 6 equivalent of hay without nutrients), and will fence livestock out of streams, moving the streamside depositional load back to pasture acres.

NRCS Definition: *Riparian Herbaceous Cover (390)* Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats. This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes: Provide or improve food and cover for fish, wildlife and livestock; Improve and maintain water quality; Establish and maintain habitat corridors; Increase water storage on floodplains; Reduce erosion and improve stability to stream banks and shorelines; Increase net carbon storage in the biomass and soil; Enhance pollen, nectar, and nesting habitat for pollinators; Restore, improve or maintain the desired plant communities; Dissipate stream energy and trap sediment; and Enhance stream bank protection as part of stream bank soil bioengineering practices. Areas adjacent to perennial and intermittent watercourses or water bodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and water bodies, this zone extends to the center of the channel or basin. Applies to areas where channel and stream bank stability is adequate to support this practice; and/or where the riparian area has been altered and the potential natural plant community has changed.

Lifespan: 5 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. Enter new or verify existing length of buffer
- 3. Enter new or verify existing average width of buffer
- 4. Enter any additional comments
- 5. Click SAVE then Close

NOTE: Acres of buffer are auto-calculated based on length and width.

NOTE: If buffer is less than 35' in width, it will be credited as a narrow buffer.

#### **Exclusion Fence with Forest Buffer**

**USC Definition:** This BMP should be submitted for any fencing project along pastured streams that creates riparian areas between pasture and stream. The BMP will convert pasture to forest, and will fence livestock out of streams, moving the streamside depositional load back to pasture acres, but will NOT receive an upslope, grass buffer efficiency benefit. Applies to areas where animals are pastured, but fenced out of streams or waterbodies with a riparian forest and/or unmanaged forested buffer.

**Chesapeake Bay Definition:** This BMP should be submitted for any fencing project along pastured streams that includes tree plantings to create a forest buffer area. The BMP will convert pasture to forest, and will fence livestock out of streams, moving the streamside depositional load back to pasture acres.

NRCS Definition: Riparian Forest Buffer (391) An area predominantly trees and/or shrubs located adjacent to and upgradient from watercourses or water bodies. Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms; Create or improve riparian habitat and provide a source of detritus and large woody debris; Reduce excess amounts of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow; Reduce pesticide drift entering the water body; Restore riparian plant communities; Increase carbon storage in plant biomass and soils. Riparian forest buffers are applied on areas adjacent to permanent or intermittent streams, lakes, ponds, and wetlands. They are not applied to stabilize stream banks or shorelines.

Lifespan: 5 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers
- 2. Enter new or verify existing length of buffer
- 3. Enter new or verify existing average width of buffer
- 4. Enter any additional comments
- 5. Click SAVE then Close

NOTE: Acres of buffer are auto-calculated based on length and width.

NOTE: If buffer is less than 35' in width, it will be credited as a narrow buffer.

#### **Cropland Grass Buffer**

**USC Definition:** Linear strips of grass or other non-woody vegetation maintained between the edge of fields and streams that measure 35 feet in width or greater. If width is less than 35 feet, it is considered a narrow width grass buffer, but still earns credit in the Bay Model. Applies to areas where a grass buffer exists between the edge of field and edge of stream.

Chesapeake Bay Definition: Agricultural riparian grass buffers are linear strips of grass or other non-woody vegetation maintained between the edge of fields and streams, rivers or tidal waters that help filter nutrients, sediment and other pollutants from runoff.

NRCS Definition: *Riparian Herbaceous Cover (390)* Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats. This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes: Provide or improve food and cover for fish, wildlife and livestock; Improve and maintain water quality; Establish and maintain habitat corridors; Increase water storage on floodplains; Reduce erosion and improve stability to stream banks and shorelines; Increase net carbon storage in the biomass and soil; Enhance pollen, nectar, and nesting habitat for pollinators; Restore, improve or maintain the desired plant communities; Dissipate stream energy and trap sediment; and Enhance stream bank protection as part of stream bank soil bioengineering practices. Areas adjacent to perennial and intermittent watercourses or water bodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and water bodies, this zone extends to the center of the channel or basin. Applies to areas where channel and stream bank stability is adequate to support this practice; and/or where the riparian area has been altered and the potential natural plant community has changed.

Lifespan: 5 years

#### **Instructions for entering data:**

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing length of buffer
- 2. Enter new or verify existing average width of buffer
- 3. Enter any additional comments
- 4. Click SAVE then Close

NOTE: Acres of buffer are auto-calculated based on length and width.

NOTE: If buffer is less than 35' in width, it will be credited as a narrow buffer.

NOTE: The benefit for grass buffers on cropland is a 4:1 reduction for TN and 2:1 reduction for TP and TSS. That means that for every acre of grass buffer, the land is converted to grass which represent a lower loading rate since no manure or fertilizer is applied.

#### **Cropland Forest Buffer**

**USC Definition:** Linear strips of riparian vegetation maintained between the edge of fields and streams that measure 35 feet in width or greater. If width is less than 35 feet, it is considered a narrow width forest buffer, but still earns credit in the Bay Model. Applies to areas where a riparian forest buffer exists between edge of field and edge of stream.

**Chesapeake Bay Definition:** Agricultural riparian forest buffers are linear wooded areas along rivers, stream and shorelines. Forest buffers help filter nutrients, sediments and other pollutants from runoff as well as remove nutrients from groundwater.

NRCS Definition: *Riparian Forest Buffer (391)* An area predominantly trees and/or shrubs located adjacent to and upgradient from watercourses or water bodies. Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms; Create or improve riparian habitat and provide a source of detritus and large woody debris; Reduce excess amounts of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow; Reduce pesticide drift entering the water body; Restore riparian plant communities; Increase carbon storage in plant biomass and soils. Riparian forest buffers are applied on areas adjacent to permanent or intermittent streams, lakes, ponds, and wetlands. They are not applied to stabilize stream banks or shorelines.

Lifespan: 5 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing length of buffer
- 2. Enter new or verify existing average width of buffer
- 3. Enter any additional comments
- 4. Click SAVE then Close

NOTE: Acres of buffer are auto-calculated based on length and width.

NOTE: If buffer is less than 35' in width, it will be credited as a narrow buffer.

NOTE: The benefit for forest buffers on cropland is a 4:1 reduction for TN and 2:1 reduction for TP and TSS. That means that for every acre of forest buffer, the land is converted to forest which represent a lower loading rate since no manure or fertilizer is applied.

#### **Horse Pasture Management**

**USC Definition:** Horse pasture management is defined as maintaining a 50% pasture cover with managed species (desirable, inherent) and managing high traffic areas. This practice applies to all horse pasture having 50% or greater vegetative cover.

**Chesapeake Bay Definition:** Horse Pasture Management is defined as maintaining a 50% pasture cover with managed species (desirable, inherent) and managing high traffic areas.

**NRCS Definition:** N/A

Lifespan: 10 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing animal numbers associated with the practice
- 2. Enter new or verify existing acres of horse pasture management plan, including any additional acres improved to stabilize overused small pasture containment areas (animal concentration areas) adjacent to animal shelters or farmsteads
- 3. Enter any additional comments
- 4. Click SAVE then Close

#### **Ag Land Retirement**

**USC Definition:** Agricultural land retirement takes marginal and highly erosive cropland (HEL) out of production by planting permanent vegetative cover such as shrubs, grasses, and/or trees. Agricultural agencies have a program to assist farmers in land retirement procedures. Converts land area to hay without nutrients. Applies to all row crops(conventional and low till), all alfalfa, all hay, and all pasture.

#### **Chesapeake Bay Definition:**

Land Retirement to hay without nutrients (HEL) — Converts land area to hay without nutrients. Agricultural land retirement takes marginal and highly erosive cropland out of production by planting permanent vegetative cover such as shrubs, grasses, and/or trees. Agricultural agencies have a program to assist farmers in land retirement procedures.

Land Retirement to pasture (HEL) — Converts land area to pasture. Agricultural land retirement takes marginal and highly erosive cropland out of production by planting permanent vegetative cover such as shrubs, grasses, and/or trees. Agricultural agencies have a program to assist farmers in land retirement procedures.

**NRCS Definition:** N/A

Lifespan: 10 years

#### Instructions for entering data:

Follow "General Entry Instructions for Multi-Year Practices" then proceed to the instructions below.

- 1. Enter new or verify existing acres of retired ag land
- 2. Enter any additional comments
- 3. Click SAVE then Close

NOTE: If cropland is converted to pasture land under Ag Land Retirement, the same acres could receive credit under Prescribed Grazing as well as Ag Land Retirement.

NOTE: All acres of Ag Land Retirement after 2012 will result in a credited land use change. All acres of Ag Land Retirement previous to 2012 will still be listed as a credited BMP, but are assumed to be included in the satellite/ag census data.

# **Annual BMP Definitions & Individual Data Entry Instructions**

# **Table of Contents**

Precision Feed Management

Nutrient Management

Conservation Tillage

Cover Crops

#### **Precision Feed Management Dairy**

**USC Definition:** Dairy Precision Feeding is focused on nitrogen (N) and phosphorus (P) management for the lactating portion of a dairy herd. Dairy precision feeding reduces the quantity of phosphorus and nitrogen fed to livestock by formulating diets within 110% of Nutritional Research Council recommended level in order to minimize the excretion of nutrients without negatively affecting milk production. Credit for this BMP is applied for the lactating portion of a dairy herd that is engaged in NYS Precision Feed Management (PFM), including PFM Benchmarking and implementation of a Feed Management Plan. Key benchmark indicators for CBP modeling purposes are Milk Urea Nitrogen (MUN) concentrations within a recommended range and ration P within 110% of Nutritional Research Council (NRC) recommendation. This practice applies to dairy animals only.

Chesapeake Bay Definition: Dairy Precision Feeding reduces the quantity of phosphorus and nitrogen fed to livestock by formulating diets within 110% of Nutritional Research Council (NRC) recommended level in order to minimize the excretion of nutrients without negatively affecting milk production.

**NRCS Definition** (*Could include multiple BMPs*): *Feed Management (592)* Manipulating and controlling the quantity and quality of available nutrients, feedstuffs, or additives fed to livestock and poultry. The purpose is to improve feeding efficiency in a manner that facilitates and contributes to the conservation of natural resources; reduce the quantity of nitrogen, phosphorus and other nutrients excreted in the manure; reduce the quantity and viability of pathogens in manure; and reduce odors, particulate matter, and greenhouse gas (GHG) emissions production from animal feeding operations.

Lifespan: Annual Practice

#### Instructions for entering data:

Follow "General Entry Instructions for Annual Practices" then proceed to instructions below.

- 1. Check Meets N if the farm meets the Nitrogen Requirement, then enter the number of animals in the lactating portion of the herd that meet these requirements
- 2. Check Meets P if the farm meets the Phosphorus Requirement, then enter the number of animals in the lactating portion of the herd that meet these requirements
- 3. Enter any additional comments
- 4. Click SAVE then Close

NOTE: If only a portion of the lactating herd meets the PFM requirements from the "PFM Tool" than you enter the animal numbers associated with that portion that meets the requirements. (Whole lactating herd does not need to be included to receive credit – credit is based on animal numbers meeting requirements.)

#### **Nutrient Management**

**USC Definition:** Implementation of formal Nutrient Management planning is documented and supported with records demonstrating efficient use of nutrients for both crop production and environmental management.

**Chesapeake Bay Definition:** \*\*\*See reverse side for chart\*\*\* Nutrient management has four basic components: the nutrient source, rate, timing, and placement. Each of these four components of NM are managed at the field or sub-field scale in a manner to support crop productivity, achieve high nutrient use efficiency by the growing crop, and to minimize nutrient loss to the environment.

- Core N includes 5 required elements: 1) application rate modification; 2) manure analysis used in plan; 3) spreader must be calibrated within one year; 4) yield estimates used in plan; 5) legume residual N credits and manure mineralization are credited as part of plan.
- N Rate requires that the core nitrogen nutrient management BMP be implemented. Includes any of the following: split applications, variable rate N application, or reduced rate from core NM BMP.
- N Timing requires that the core nitrogen nutrient management BMP be implemented. Includes split application.
- N Placement requires that the core nitrogen nutrient management BMP be implemented. Includes any of the following: injection of inorganic N, incorporation, or setbacks.
- Core P includes 6 required elements: 1) application rate modification; 2) P soil test used in plan; 3) manure analysis used in plan; 4) spreader must be calibrated within one year; 5) yield estimates used in plan; 6) legume residual N credits and manure mineralization are credited as part of plan.
- P Rate —requires that the core phosphorus nutrient management BMP be implemented. Includes any of the following: split applications, variable rate P application, or reduced rate from core NM BMP. P-based manure application must be equivalent to crop P removal.
- **P Timing** requires that the core phosphorus nutrient management BMP be implemented. Includes either split application or application in lower P-loss risk season.
- **P Placement** requires that the core phosphorus nutrient management BMP be implemented. Includes any of the following: incorporation, setbacks, or use of P Index for application rate.

NRCS Definition: *Nutrient Management (590)* Managing the amount (rate), source, placement (method of application) and timing of plant nutrients and soil amendements.

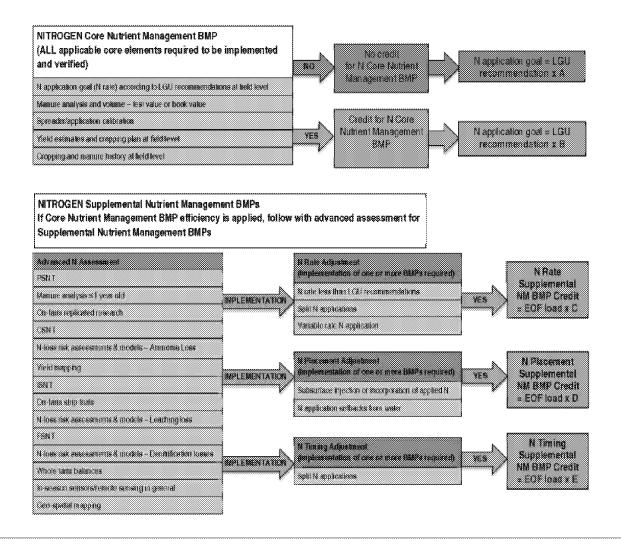
Lifespan: Annual Practice

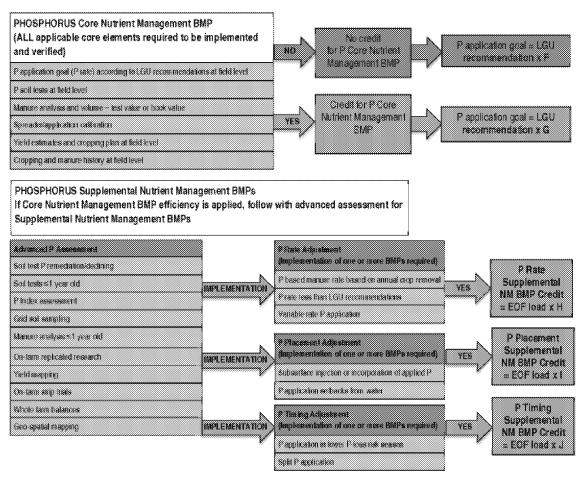
#### **Instructions for entering data:**

Follow "General Entry Instructions for Annual Practices" then proceed to instructions below.

- 1. Enter Row Crop acres
- 2. Enter Alfalfa/Grass acres
- 3. Enter Permanent Hay acres
- 4. Enter Pasture acres
- 5. Enter a check for each category that the practice meets (Core N, N Rate, N Placement, N Timing, Core P, P Rate, P Placement, and P Timing)
- 6. Enter any additional comments
- 7. Click SAVE then Close.

NOTE: If the operation has a CNMP, you must enter the Nutrient Management and Conservation Plan as two separate practices.





#### **Conservation Tillage**

**USC Definition:** The definitions of the three categories that qualify for conservation tillage are as follows:

- 1. Low Residue Tillage A conservation tillage routine that involves the planting, growing, harvesting of crops with minimal disturbance to the soil in an effort to maintain 15-29% crop residue coverage immediately after planting each crop.
- 2. Conservation Tillage A conservation tillage routine that involves the planting, growing, and harvesting of crops with minimal disturbance to the soil in an effort to maintain 30-59% crop residue coverage immediately after planting each crop.
- 3. High Residue, Minimum Soil Disturbance Tillage A conservation tillage routine that involves the planting, growing and harvesting of crops with minimal disturbance to the soil in an effort to maintain at least 60% crop residue coverage immediately after planting each crop.

NOTE: Any tillage routine that achieves less than 15% crop residue coverage immediately after planting each crop is considered <u>conventional tillage</u>, and does <u>NOT</u> qualify for the conservation tillage practices.

**Chesapeake Bay Definition:** There are three categories for Conservation Tillage:

- 1. Low residue, strip-till/no-till
  - 15-29% cover, strip-till or no-till, and less than 40% soil disturbance
- 2. Conservation Tillage
  - 30-59% cover
- 3. High residue, minimum soil disturbance tillage
  - >60% cover, minimum disturbance

NRCS Definition (Could include multiple BMPs): Residue and Tillage Management – No Till (329) Limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the soil surface year round. Residue and Tillage Management – Reduced Till (345) Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.

Lifespan: Annual Practice

#### Instructions for entering data:

Follow "General Entry Instructions for Annual Practices" then proceed to instructions below.

- 1. Enter acres associated with each type of tillage practice.
- 2. Enter any additional comments.
- 3. Click SAVE then Close.

NOTE: Each segment in the Bay Model is assigned a default amount of conservation tillage based on historical data from the Conservation Technology Information Center (CTIC). Specifying acres under this BMP adds the specified acres to the historical amount. The model treats this as conventional tilled acres converted to conservation till acres. Only one submission unit may be used per scenario.

#### **Cover Crops**

**USC Definition:** This BMP applies to wheat, rye, barley, triticale, or other small grain cover crops that are planted to reduce erosion and sediment loss after the typical growing season. To take credit for cover crops, the crop must have been an effectively grown crop. Credit cannot be taken for crops that were planted but did not effectively grow for any reason.

Chesapeake Bay Definition: This BMP refers to (non-harvested) cereal cover crops specifically designed for nutrient removal. a.) A winter wheat or rye crop planted no more than 2 weeks prior to the average frost date with a drilled seeding method – the crop may neither be fertilized nor harvested. b.) A winter wheat or rye crop planted no more than 2 weeks prior to the average frost date with a seeding method that is neither drilled or aerial (e.g. surface broadcast or with stalk chopping or light disking) – the crop may be neither fertilized nor harvested. c.) A commodity cover crop may receive nutrient application after March 1<sup>st</sup> of the following year after establishment.

NRCS Definition: Cover Crops (340) Grasses, legumes, and forbs planted for seasonal vegetative cover. This practice is applied to support one of more of the following purposes: Reduce erosion from wind and water; Maintain or increase soil health and organic matter content; Reduce water quality degradation by utilizing excessive soil nutrients; Suppress excessive weed pressures and break pest cycles; Improve soil moisture use efficiency; and Minimize soil compaction. All lands requiring seasonal vegetative cover for natural resource protection or improvement.

Lifespan: Annual Practice

#### **Instructions for entering data:**

Follow "General Entry Instructions for Annual Practices" then proceed to instructions below.

- 1. Enter the acres of each crop type Wheat, Rye, Barley or Triticale/Other Small Grain
- 2. Choose Planting Method Drilled or Other
- 3. Choose when Manure was Applied Fall/Winter, Spring or No Manure
- 4. Choose the Outcome Harvested or Plowed Under (report as "plowed under" if the cover crop is killed and residue is left)
- 5. Enter any additional comments
- 6. Click SAVE then Close

NOTE: A standard date of planting for cover crops is from 2 weeks prior to average frost date up to the average frost date. If any manure of fertilizer is applied to the field then the designation of Commodity Cover Crops is used. Each cover crop type that is seeded with cost share money needs to have been planted by October 1<sup>st</sup>. If the farmer has done the planting on their own then the cover crop can be seeded as late as October 15<sup>th</sup>.

NOTE: Our model year starts July 1<sup>st</sup> and runs through June 30<sup>th</sup>. (i.e. Data submitted in the fall will be the data that with implementation dates between July 1<sup>st</sup> of the previous year through June 30<sup>th</sup> of the current year.)

Therefore cover crops are submitted, verified and applied to the correct and current year.

## **BMP Verification Overview**

Each year the USC will provide each county with a list of farms and associated BMPs in their county, from the "random sampling" completed by Tetra Tech. These farms will need, on farm verification completed for submission into the database. On farm verification will be completed using a "whole farm approach" to collect information on all BMPs that are located on each farm selected.

#### **Table of Contents**

Data Entry/Verification Timeline
Instructions for In-Field Verification
AEM Data Entry Sheet

Annual BMP Questionnaire

# **BMP Data Entry & Verification Timeline**

#### January-

Random Sampling Report distributed to counties

#### January through June-

BMP Verification, Data Collection, and Data Entry

#### June through July-

Finalizing ALL data for the dates of July 1 of the previous year - June 30 of the current year

# July 31st -

Data Submission Deadline

## **Upper Susquehanna Coalition - Chesapeake Bay Program**

#### **Instructions for In-Field Verification of BMP's**

#### Useful tools for verification -

- Tier 1 worksheet if time allows, Tier 1 farm information could be updated during the on-site verification visit.
- Tier 2 worksheet(s) to assist with the evaluation of each practice.
- Tier 5B Conservation Plan Evaluation Worksheet to assist with the evaluation of a Conservation Plan
- Tier 5B BMP Evaluation Worksheet to assist with the evaluation of BMP's
- USC Annual BMP Questionnaire
- USC Ag. BMP Data Collection Sheet to assist in collecting information to be included in data entry.
- USC Data Entry Information & BMP Definitions document

#### Before going to the farm -

- 1. If available, obtain the NRCS Conservation Practices Standard(s) and locate the design(s) for the system or practice(s) to be evaluated.
- 2. Review the design and any related notes from the practice installation.

#### **During the on-site verification –**

- Verify that the system/practice is stable with no signs of erosion, deposition, sloughing, leaks, cracks, dead or lacking vegetation, etc. This will require an in depth evaluation of each practice.
- 2. If available, utilize the Operation & Maintenance section of the design or practice standard to verify that the practice is being properly operated & maintained.
- 3. Verify that each system/practice is properly functioning.
  - a. Determine if there is evidence of overtopping, concentrated flows, or contaminated water where it does not belong.
  - b. Verify that the capacity (depth, width & grade) has been maintained.

#### What to do after returning to the office -

- 1. If Tier 2 and/or Tier 5B worksheets were not completed during the on-site verification, complete those worksheet in the office using your knowledge of the farm and any notes taken during the field visit.
- 2. Enter all data collected into the AEM database. (See Data Entry Information & BMP Definitions document)
- 3. If during the on-site verification, a practice was found to be in need of maintenance Enter the inspection date and click the re-inspect button. Be sure to follow-up with this operation regarding the required maintenance for the practice. (Practices will have a 1 year maintenance period when the re-inspect button is clicked. If the inspection status is not changed to PASS within 1 year, it will automatically be retired, and will no longer receive credit.)
- 4. File all hard copy documentation.

# **Useful Tools and Forms**

Tier 1 Worksheet

Tier 2 Worksheets https://www.nys-soilandwater.org/aem/techtools.html

Tier 5B Conservation Plan Evaluation Worksheet

Tier 5B BMP Evaluation Worksheet

USC-AEM Ag. BMP Data Collection Sheet

USC Annual BMP Questionnaire



# AGRICULTURAL ENVIRONMENTAL MANAGEMENT

Tier 1

AEM Identification Number:

AEM 📜	County SWCD	Date://
Evaluator Name:	Evaluating Agency:	
Watershed Identification:		
Farm Name:		
Owner's Name:	Operator's Name:	
Address:	Address:	
Phone:	Phone:	
Fax:	Fax:	
Email:	Email:	
Preferred Contact Point? (please check only  Owner Operator	one)	
Business Structure Operation Type  B) Do you plan to subdivide any p  2) Basic Farm Information A) What Primary Farm Enterprise Dairy	Expansion  Expansion  Diversification of Farm But portion of your farm in the next 5 years.  Beef Horses  Wine Vineyard  Sheep/Goats	Retirement usiness  Sale of Farm  years?  Yes  No  Fruit/Vegetables Greenhouse
B) Please indicate the following not Cropland Actor Grazed Land Permanent H Woodland A Total Acres  C) Does your operation qualify for 3) Animal Numbers for your Primary F	r Ag Value Assessment?	Rented es
Average Weight: Number:	Average Weigh	t: Number:

anagement Questions (Please check Yes or No)		Yes	N
Do you spread manure?			
Do you have a manure storage facility?			
Do you generate process washwater from the of the milkcenter, egg wash, washing of produce)	cleaning of product or facilities?		
Is there a barnyard or outdoor feedlot on your	farm?		
Do you store silage or other high moisture fee			T
Do you utilize pastureland on your farm?			
Do you use commercial fertilizer?			
Do you use pesticides (herbicides, insecticides	s, fungicides) on your farm?		
Do you store and/or mix pesticides (herbicides			
Does your operation utilize cropland for row c			
Is the water supply on your farm from a well of			Ē
Is there a waterbody within or adjacent to you			
Do you presently or do you plan to harvest tim			
Do you store fuel or other bulk petroleum prod			Ē
Have you received odor complaints or do you			Г
NYS Agricultural Interest Asses  Agricultural Tax Relief Agri-Tourism Air Quality	<ul><li>Integrated Pest Management</li><li>Irrigation Management</li><li>Manure Treatment Options</li></ul>	est	
☐ Agricultural Tax Relief ☐ Agri-Tourism	<ul><li>Integrated Pest Management</li><li>Irrigation Management</li></ul>	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management Fisheries Habitat Management	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management ☐ Wellhead Protection	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management Fisheries Habitat Management Forest Management/Timber Harvest	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management ☐ Wellhead Protection ☐ Wetland Conservation	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management Fisheries Habitat Management	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management ☐ Wellhead Protection	est	
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management Fisheries Habitat Management Forest Management/Timber Harvest Grasslands Farming  Would you like to receive a copy of the AEM C	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management ☐ Wellhead Protection ☐ Wetland Conservation ☐ Wildlife Habitat Improvement ☐ Guide to Conservation Funding? ☐ Yest		
Agricultural Tax Relief Agri-Tourism Air Quality Biofuels Biosecurity Conservation Easements Energy Conservation/Generation Environmental Management Systems Farmland Protection Feed Management Fisheries Habitat Management Forest Management/Timber Harvest Grasslands Farming	☐ Integrated Pest Management ☐ Irrigation Management ☐ Manure Treatment Options ☐ Neighbor-Farm Relations ☐ Nuisance Wildlife Control ☐ Organic Farming ☐ Pollution Credit Trading ☐ Right To Farm ☐ Stream Management ☐ Water Conservation/Management ☐ Wellhead Protection ☐ Wetland Conservation ☐ Wildlife Habitat Improvement ☐ Guide to Conservation Funding? ☐ Yest		



# Tier 5B Conservation Plan Evaluation Requirements Checklist for AEM Base Program

Check only ONE box per form.

3A Plan	3B CNMP	3C Whole Farm

Completed Year

Completed Year

Completed year

This checklist will help determine if all required tasks and documentation have been completed for the Tier 5B Evaluation of an AEM Tier 3 Plan. Also consult "Participating in AEM Tier 5B" when completing this checklist.

# Please complete the following information on the farm planned.

Co	ounty: Date:	AEM YEAR:
Αŀ	EM Farm Identification Number:	
12	2-digit HUC of the predominant watershed in which the f	arm is located:
Pr	rimary type of farm evaluated: Ac	cres:
An	nimal Units on the farm:	
Da	ate of the original plan:	
Ex	xisting planned component(s): Farmstead Cropland	Nutrient Mgmt. Pasture Pest
Ad	dditional components planned: Farmstead Cropland	Nutrient Mgmt. Pasture Pest NA
Ad	dditional acres planned:	
Ple	lease check each item addressed and documented in the p  If an item does not apply please explain why in the	
1.	☐ Identify the land units planned and review the natural and recommendations in the plan.	resource issues & opportunities, decisions,
2.	Meet with the farmer to review and discuss their plant decisions from the plan by documenting on the <i>Record of any</i> changes made to the farming operation that necessitate Tier 1 and 2 can be used to help identify changes and assess	Decisions and Progress form. Also, note a plan update/revision. Note that AEM
3.	Check that the existing plan covers all natural resource missing high priority issues that should be progressively p	
4.	Discuss with the farmer the decisions/recommendation then update the plan to reflect any new high priority issues timetable to implement already planned practices in the Research	& opportunities, or adjustments to the

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5.	☐ Plan any additional high priority issues or components the farmer is now willing to address (progressively plan). Utilize the <i>Participating in AEM Tier 3</i> document and the <i>Tier 3 Plan Requirements Checklist</i> to help guide the planning.
6.	Tier 3B or C plans must be evaluated by or under the supervision of a Certified Planner.
7.	Complete the update, review with the farmer and gain their approval. Note the process in the <i>Assistance Notes</i> in the farmer's case file and in any data management system maintained by the District.
8.	Provide a copy of the revised plan to the farmer.
9	Comments:

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# Tier 5B BMP Evaluation Requirements Checklist for AEM Base Program

This checklist will help determine if all required tasks and documentation have been completed for the Tier 5B Evaluation of an existing BMP system or conservation practice. Also consult "Participating in AEM Tier 5B" when completing this checklist.

Please complete the following information on the farm & BMP evaluated. **AEM YEAR:** County: Date: **AEM Farm Identification Number:** 12-digit HUC of the predominant watershed in which the farm is located: Type of BMP System/conservation practice(s) evaluated: **Date of BMP installation:** ID the source of cost share for original installation (if applicable): Ag NPS Farm Bill Both Type or Farm: Acres: Animal Units on the farm: Please check each item addressed and documented in the plan and/or the farm's case file. If an item does not apply please explain why in the notes section of this form. 1. The NRCS Conservation Practice Standard(s), the design, and "as-built" of the conservation practice(s) to be evaluated have been found and reviewed. The design and "as-built" was signed by an individual(s) with the appropriate Job Approval Authority. 2. An on-site evaluation of the practice(s) was conducted noting the condition of the practice, the status of operation & maintenance, and if the practice is properly functioning including a check of the capacity if appropriate. You have utilized the assistance, if needed, of an individual with Job Approval Authority or a Professional Engineer. 3. Determination was made on whether or not the practice is addressing the concern for which it was installed. The "Criteria" and "Considerations" sections of the appropriate NRCS Conservation Practice Standard were utilized to help make this determination. 4. You have met with the farmer to discuss if the practice is meeting expectations, and to review operation and maintenance activities.

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5.	The farmer has been provided a written report on the condition of the practice that identifies any
	changes and/or improvements needed, and provides any additional information required to properly
	operate and maintain the practice. Recommendations on new or additional BMPs have been made in
	needed. The report was reviewed on-site.
6.	The evaluation of the practice and review with the farmer has been documented in the conservation plan or case file. A copy of the report has also been filed. Accomplishments were documented in any data management system maintained by the District.

7. Comments:

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# **UPPER SUSQUEHANNA COALITION - CHESAPEAKE BAY PROGRAM** AGRICULTURAL ENVIRONMENTAL MANAGEMENT AG BMP DATA ENTRY SHEET

Farm Name	AEM ID	-	***************************************
AEM Evaluator	Inspection Date	_//	
Multi-Year Practices	Inspection Result (✔ PASS or FAIL)	Cost Shared? (✔ if yes)	NRCS Standard? (✔ if yes)
Manure Storage Facility * If multiple systems - see attached *			
Implementation Date//	PASS FAIL		
Animal Type Animal Numbers Covered	Re-Inspect		
Silage Leachate			
Implementation Date / /	PASS FAIL		
Animal Type Animal Numbers	Re-Inspect		
Milkhouse Waste			
Implementation Date / /	PASS FAIL		
Number of Dairy Cows	Re-Inspect		
Barnyard & Runoff Management * If multiple systems - see attached *			
Implementation Date / /			
Animal Type Animal Numbers			
☐ Heavy Use Area ☐ Roof Runoff Structure			
Concrete Diversion	PASS FAIL		
Aggregate Stormwater Runoff Control	Re-Inspect		
☐ Managed Vegetation ☐ Vegatated Treatment Area/Strip			
☐ Mulch ☐ Total Confinement (after 2005)			
Animal Trails & Walkways			
Soil Conservation Plan			
Implementation Date / / Acres	PASS FAIL		
<del></del>	Re-Inspect		
Prescribed Grazing	***************************************		**************************************
Implementation Date / /	PASS FAIL		
Animal Type Animal Numbers Acres	Re-Inspect		
Exclusion Fence with Grass Buffer * If multiple buffers - see attached *			
Implementation Date / /	PASS FAIL		
Animal Type Animal Numbers	Re-Inspect		
Length feet Width feet			
Exclusion Fence with Forest Buffer			
Implementation Date / /	PASS FAIL		
Animal Type Animal Numbers	Re-Inspect		<u></u>
Length feet Width feet			
Cropland Grass Buffer * If multiple buffers - see attached *		30000000000000000000000000000000000000	***************************************
Implementation Date / /	PASS FAIL		
Length feet Width feet	Re-Inspect		
Cropland Forest Buffer * If multiple buffers - see attached *			
Implementation Date / /	PASS FAIL		
Length feet Width feet	Re-Inspect	Luud	Linux
Horse Pasture Management	CALALAI .		
Implementation Date / /	PASS FAIL		
Animal Numbers Acres	Re-Inspect	Li	ئـــا
Agricultural Land Retirement	L		
Implementation Date / /	PASS FAIL		m
Acres Retired	Re-Inspect	لسيا	ئسسا
	i ite irispect		

Annual Practices		Field Verifield (🗸 if yes)	Cost Shared? (✔ if yes)	NRCS Standard? (✔ if yes)
Precision Feed Management (For the lactating part of the herd)  Implementation Date//  Number of Animals Meeting N Number of Animals Mee	eting P	Field Verified		
Nutrient Management Plans  Implementation Date / /  Landuse Type Acres NMLevel N NM Level P Row Crops	ent	Field Verified		
Conservation Tillage Implementation Date / /  Low Residue, Strip-Till/No-Till (15-29% cover & <40% soil disturk Conservation Tillage (30-59% cover)  High Residue, min. disturbance (>60% cover)	bance)	Field Verified Acres ————		
Wheat, Rye, Barley, Tritcale or Drilled or Other No Manure	e, Fall/Winter, Harve	Field Verified come Acres		
Notes				
	***************************************			000000000000000000000000000000000000000
	***************************************			
	***************************************			

Multi-Year Practices (Additional)	Inspection Result (✔ PASS or FAIL)	Cost Shared? (✓ if yes)	NKCS Standard? (✔ if yes)
Manure Storage Facility #2  Implementation Date / /  Animal Type Animal Numbers Covered	PASS FAIL Re-Inspect		
Manure Storage Facility #3  Implementation Date / / Animal Type Animal Numbers Covered	PASS FAIL Re-Inspect		
Manure Storage Facility #4  Implementation Date / / Animal Type Animal Numbers Covered	PASS FAIL Re-Inspect		
Barnyard & Runoff Management #2 Implementation Date / / Animal Type Animal Numbers	PASS FAIL Re-Inspect		
Barnyard & Runoff Management #3 Implementation Date / / Animal Type Animal Numbers	PASS FAIL Re-Inspect		
Exclusion Fence with Grass Buffer #2  Implementation Date / /  Animal Type Animal Numbers  Length feet Width feet	PASS FAIL Re-Inspect		
Exclusion Fence with Grass Buffer #3  Implementation Date / /  Animal Type Animal Numbers  Length feet Width feet	PASS FAIL Re-Inspect		
Exclusion Fence with Forest Buffer #2  Implementation Date / /  Animal Type Animal Numbers  Length feet Width feet	PASS FAIL Re-Inspect		
Exclusion Fence with Forest Buffer #3  Implementation Date / / Animal Type Animal Numbers  Length feet Width feet	PASS FAIL Re-Inspect		
Cropland Grass Buffer #2 Implementation Date / / Length feet Width feet	PASS FAIL Re-Inspect		
Cropland Forest Buffer #2 Implementation Date// Lengthfeet Widthfeet	PASS FAIL Re-Inspect		
Notes			

Fa	rm Name _		***************************************			A	EM ID	
Technician Name			Date Com	pleted				
			Dairy	Precision	n Feed Management			
1.	Is the hero	l engaged in NY	'S Precision Feed	l Manageme	ent? (If yes, answer 2-8)	•	∕es □	No 🗌
2.	MUN - Mil	k Urea Nitroge	n number (date	and results	of last 4 MUN)			
	Date	Date	Date	Date_				
	MUN	MUN	MUN	MUN_				
3.		ıs % in feed Rat						
					Phone num	ber		
4.					being milked no dry cows)			
5.					once-a-day or every-other-			
6.	Breed of c	ow and %( i.e. I	Holstein 100% O	R Holstein 8	30%, Jersey 20%, etc.)			
7.	Does the c	peration meet	the recommend	led range ar	nd ration of nitrogen for any	given portio	n of the herd?	
						•	∕es□	No 🗌
	If yes, how	/ many animals	?					
8.	Does the c	peration meet	the recommend	led range ar	nd ration of phosphorus for	anv given po	rtion of the he	 rd?
		•		Ü			∕es□	No□
	If yes, how	many animals	?					
				Nutrient	Management			
To	tal Acres:	Row Crops	Alfalf	a/Grass Hay	/ Permanent	Нау	Pasture_	
Nit	rogen Core							
	•		ding to Cornell re	ecommenda	itions?	Yes 🗌	No 🗌	
	_		book or test valu			Yes 🗍	No 🗆	
		-	alibrated to appl	•	rect rates?	Yes 🗌	No 🗆	
		-	yield estimates a	-		Yes 🗆	No 🗆	
			cropping and ma			Yes 🗆	No 🗆	
				andre miscor	y records.	105	110	
IVII	rogen Supp	lemental BMP	S					
	P	SNT	Manure Analy	/sis < 1 yr.	On-farm replicated		SNT	
-			old		research			_
	Viola	Nannina	ICAIT		On form strip triple		assessments	
	rieid	Mapping	ISNT		On-farm strip trials	1	odels – cation losses	
-	ln-s	season				Demann	JUNION 103363	-
		mote sensing	Geo-spatial	mapping	N-loss risk assessment & models – Ammonia Loss	Whole fa	rm balances	

Have any of the following practices been used/implemented due to using one of the above tools.

N	Rate Adjustment				
	1. Is the operation applying	nutrients at a rate less than	Cornell University recommend	dations? Yes 🗌	No 🗌
	2. Is the operation applying	Yes 🗌	No 🗌		
	3. Is the operation applying	Yes 🗌	No 🗆		
N	Placement Adjustment				
	1. Is the operation using sub	Yes 🗌	No 🗌		
	2. Is the operation implement	nting N application setbacks	s from water?	Yes 🗌	No 🗌
N	Timing Adjustment				
	1. Is the operation applying	nutrients using split N appli	cations?	Yes 🗌	No 🗌
Pl	nosphorus Core				
	1. Is phosphorus applied acc	ording to Cornell recomme	ndations?	Yes 🗌	No 🗌
	2. Does the operation have I	P soil tests?		Yes 🗌	No 🗌
	3. Is manure analysis used (Ł	oook or test value)?		Yes 🗌	No 🗌
	4. Is the manure spreader ca	alibrated to apply at the cor	rect rates?	Yes 🗌	No 🗌
	5. Does the operation have	yield estimates and a cropp	ing plan?	Yes 🗆	No 🗌
	6. Does the operation have	cropping and manure histor	y records?	Yes 🗌	No 🗌
Pl	nosphorus Supplemental BN	ИPs			
	Soil test P remediation/declining	Soil Tests < 1 yr old	P Index assessment	Grid soil sampling	
	Manure analysis < 1 yr. old	On-farm replicated research	Yield Mapping	On-farm strip trials	
	Whole farm balances	Geo-spatial mapping			
	Have any of the foll	owing practices been used/	implemented due to using one	of the above tools.	
P	Rate Adjustment				
	1. Is the operation applying	nutrients at a rate less than	Cornell recommendations?	Yes 🗌	No 🗆
	2. Is the operation applying	P manure rates based on ar	nnual crop removal	Yes 🗌	No 🗆
	3. Is the operation applying	nutrients at a variable P app	olication rate?	Yes 🗌	No 🗌
Р	Placement Adjustment				
	1. Is the operation using sub	surface injection or incorpo	oration of applied N?	Yes□	No□
	2. Is the operation implemen	nting P application setbacks	from water?	Yes 🗌	No 🗌
P	Timing Adjustment				
	1. Is the operation applying	nutrients using split P appli	cations?	Yes 🗌	No 🗌
	2. Is the operation applying	P during lower P-loss risk se	eason?	Yes 🗌	No 🗆

# **Conservation Tillage**

Indicate acres for each type of tillage used.			
Acres 1. Low residue, strip till/no till (15-29% cover, and less than 40% soil disturbance)  Acres 2. Conservation Tillage (30-59% cover)  Acres 3. High residue, minimum soil disturbance tillage (more than 60% cover, minimum disturbance)			
Cover Crops			
1. Does the operation plant cover crops? 2. What type of cover crop was planted?  3. What was the planting method used?		No 🗆	
<ul> <li>4. Was manure applied to the cover crops? (check for timing of manure application)</li> <li>5. Were the cover crops plowed under or killed? If so, which one?</li> <li>6. How many acres of cover crops were planted?</li> <li>7. What was the planting date?</li> </ul>			
Multi-Year BMP's			
Circle all that exist on the operation.			
Yes No Manure Storage Facility			
Yes No Silage Leachate System			
Yes No Milkhouse Waste System			
Yes 🗌 No 🔲 Barnyard & Runoff Management			
Yes ☐ No ☐ Soil Conservation Plan			
<b>Yes</b> No Prescribed Grazing			
<b>Yes</b> No Exclusion Fence with Grass Buffers			
<b>Yes</b> No Exclusion Fence with Forest Buffers	;		
Yes No Cropland Grass Buffer			
Yes No Cropland Forest Buffer			
Yes □ No □ Horse Pasture Management			

**Yes**  $\square$  **No**  $\square$  Agricultural Land Retirement

Do any of the multi-year practices currently have a need for maintenance?	Yes 🗌	No 🗌
Are there any changes to any of the multi-year practices from previous years?	Yes 🗌	No 🗆
Notes		

# For questions regarding BMP Data Entry and/or Verification, please contact:

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